Physics Division Published Journal Articles, July-December 2012

PHY-13285-HI-2012
Shell-Structure and Pairing Interaction in Superheavy Nuclei: Rotational Properties of the $Z=104$ Nucleus ^{256}Rf
P. T. Greenlees, J. Rubert, J. Piot, B. J. P. Gall, L. L. Andersson, M. Asai, Z. Asfari, D. M. Cox, F. Dechery, O. Dorvaux, T. Grahn, K. Hauschild, G. Henning, A. Herzan, R.-D. Herzberg, F. P. Heßberger, U. Jakobsson, P. Jones, R. Julin, S. Juutinen, S. Ketelhut, T. L. Khoo, M. Leino, J. Ljungvall, A. Lopez-Martens, R. Lozeva, P. Nieminen, J. Pakarinen, P. Papadakis, E. Parr, P. Peura, P. Rahkila, S. Rinta-Antila, P. Ruotsalainen, M. Sandzelius, J. Sarén, C. Scholey, D. Seweryniak, J. Sorri, B. Sulignano, Ch. Theisen, J. Uusitalo, and M. Venhart
Phys. Rev. Lett. **109**, 012501/1-5 (2012)

PHY-13345-ME-2012
Measurement of Exclusive π^0 Electroproduction Structure Functions and Their Relationship to Transverse Generalized Parton Distributions
I. Bedlinskiy *et al.* (CLAS Collaboration)
Phys. Rev. Lett. **109**, 112001/1-6 (2012)

PHY-13246-HI-2012
Comment on "Precise Determination of the Unperturbed ^{8}B Neutrino Spectrum"
S. J. Freedman, K. E. Rehm, J. P. Schiffer, and D. Seweryniak
Phys. Rev. Lett. **109**, 189201/1 (2012)

PHY-13303-HI-2012
Well-Developed Deformation in ^{42}Si
S. Takeuchi, M. Matsushita, N. Aoi, P. Doornenbal, K. Li, T. Motobayashi, H. Scheit, D. Steppenbeck, H. Wang, H. Baba, D. Bazin, L. Càceres, H. Crawford, P. Fallon, R. Gernhäuser, J. Gibelin, S. Go, S. Grévy, C. Hinke, C. R. Hoffman, R. Hughes, E. Ideguchi, D. Jenkins, N. Kobayashi, Y. Kondo, R. Krücken, T. Le Bleis, J. Lee, G. Lee, A. Matta, S. Michimasa, T. Nakamura, S. Ota, M. Petri, T. Sako, H. Sakurai, S. Shimoura, K. Steiger, K. Takahashi, M. Takechi, Y. Togano, R. Winkler, and K. Yoneda
Phys. Rev. Lett. **109**, 182501/1-5 (2012)

PHY-13318-ME-2012
New Measurements of the Transverse Beam Asymmetry for Elastic Electron Scattering from Selected Nuclei
S. Abrahamyan *et al.* (HAPPEX and PREX Collaborations)
Phys. Rev. Lett. **109**, 192501/1-6 (2012)

PHY-13224-HI-2012
Identification of the $2^+_{1,\mathrm{ms}}$ Mixed-Symmetry State in ^{136}Ce
T. Ahn, G. Rainovski, N. Pietralla, L. Coquard, T. Möller, A. Costin, R. V. F. Janssens, C. J. Lister, M. P. Carpenter, and S. Zhu
Phys. Rev. C **86**, 014303/1-7 (2012)

PHY-13173-HI-2012
Lifetime of the 2_1^+ State in ^{10}C
E. A. McCutchan, C. J. Lister, Steven C. Pieper, R. B. Wiringa, D. Seweryniak, J. P. Greene, P. F. Bertone, M. P. Carpenter, C. J. Chiara, G. Gürdal, C. R. Hoffman, R. V. F. Janssens, T. L. Khoo, T. Lauritsen, and S. Zhu
Phys. Rev. C **86**, 014312/1-8 (2012)

PHY-13289-HI-2012
Intermediate-Energy Coulomb Excitation of ^{58,60,62}Cr: The Onset of Collectivity Toward $N = 40$
T. Baugher, A. Gade, R. V. F. Janssens, S. M. Lenzi, D. Bazin, B. A. Brown, M. P. Carpenter, A. N. Deacon, S. J. Freeman, T. Glasmacher, G. F. Grinyer, F. G. Kondev, S. McDaniel, A. Poves, A. Ratkiewicz, E. A. McCutchan, D. K. Sharp, I. Stefanescu, K. A. Walsh, D. Weisshaar, and S. Zhu
Phys. Rev. C **86**, 011305(R)/1-6 (2012)

PHY-13169-HI-2012
Near-Yrast Structure of Odd-A, Neutron-Rich Pr Isotopes
T. Malkiewicz, G. S. Simpson, W. Urban, J. Genevey, U. Köster, T. Materna, J. A. Pinston, M. Ramdhane, T. Rzaca-Urban, G. Thiamova, A. G. Smith, I. Ahmad and J. P. Greene
Phys. Rev. C **85**, 044314/1-12 (2012)

PHY-13287-HI-2012
Band Structure of ^{149}Ce
W. Urban, T. Rzaca-Urban, A. Syntfeld-Kazuch, A. G. Smith, and I. Ahmad
Phys. Rev. C **86**, 017301/1-4 (2012)

PHY-13264-TH-2012
Systematic Study of p-Shell Nuclei via Single-Nucleon Knockout Reactions
G. F. Grinyer, D. Bazin, A. Gade, J. A. Tostevin, P. Adrich, M. D. Bowen, B. A. Brown, C. M. Campbell, J. M. Cook, T. Glasmacher, S. McDaniel, A. Obertelli, K. Siwek, J. R. Terry, D. Weisshaar, and R. B. Wiringa
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PHY-13307-HI-2012
γ-Ray Spectroscopy of Neutron-Deficient ^{123}Ce
J. F. Smith, L. J. Angus, E. S. Paul, C. J. Chiara, M. P. Carpenter, H. J. Chantler, P. T. W. Choy, C. N. Davids, M. Devlin, D. B. Fossan, S. J. Freeman, R. V. F. Janssens, N. S. Kelsall, T. Koike, D. R. LaFosse, D. G. Sarantites, D. Seweryniak, K. Starosta, R. Wadsworth, and A. N. Wilson
Phys. Rev. C **86**, 034303/1-12 (2012)

PHY-13327-HI-2012
Precision Measurement of the ^{6}He Half-Life and the Weak Axial Current in Nuclei
A. Knecht, R. Hong, D. W. Zumwalt, B. G. Delbridge, A. García, P. Müller, H. E. Swanson, I. S. Towner, S. Utsuno, W. Williams, and C. Wrede
Phys. Rev. C **86**, 035506/1-10 (2012)

PHY-13245-HI-2012
Absolute β-To-Ground Band Transition Strengths in ^{154}Sm
T. Möller, N. Pietralla, G. Rainovski, T. Ahn, C. Bauer, M. P. Carpenter, L. Coquard, R. V. F. Janssens, J. Leske, C. J. Lister, E. A. McCutchan, O. Möller, D. Seweryniak, and S. Zhu
Phys. Rev. C **86**, 031305(R)/1-5 (2012)

PHY-13347-HI-2012
Erratum: Intermediate-Energy Coulomb Excitation of ^{58,60,62}Cr: The Onset of Collectivity Toward $N = 40$ [Phys. Rev. C **86**, 011305(R) (2012)]
T. Baugher, A. Gade, R. V. F. Janssens, S. M. Lenzi, D. Bazin, B. A. Brown, M. P. Carpenter, A. N. Deacon, S. J. Freeman, T. Glasmacher, G. F. Grinyer, F. G. Kondev, S. McDaniel, A. Poves, A. Ratkiewicz, E. A. McCutchan, D. K. Sharp, I. Stefanescu, K. A. Walsh, D. Weisshaar, and S. Zhu
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PHY-13315-HI-2012
Low-Spin States and the Non-Observation of a Proposed 2202-keV, 0^+ Isomer in ^{68}Ni
C. J. Chiara, R. Broda, W. B. Walters, R. V. F. Janssens, M. Albers, M. Alcorta, P. F. Bertone, M. P. Carpenter, C. R. Hoffman, T. Lauritsen, A. M. Rogers, D. Seweryniak, S. Zhu, F. G. Kondev, B. Fornal, W. Królas, J. Wrzesiński, N. Larson, S. N. Liddick, C. Prokop, S. Suchyta, H. M. David, and D. T. Doherty
Phys. Rev. C **86**, 041304(R)/1-6 (2012)

PHY-13249-TH-2012
Ab Initio Calculations of Nuclear Widths via an Integral Relation
Kenneth M. Nollett
Phys. Rev. C **86**, 044330/1-20 (2012)

PHY-13255-HI-2012
Level Structure of ^{30}S: Implications for the Astrophysical ^{29}P(p,γ)^{30}S Reaction Rate in ONe Novae and X-Ray Bursts
G. Lotay, J. P. Wallace, P. J. Woods, D. Seweryniak, M. P. Carpenter, C. J. Chiara, D. T. Doherty, R. V. F. Janssens, T. Lauritsen, A. M. Rogers, and S. Zhu
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PHY-13308-RI-2012
Development and Beam Test of a CW Radio Frequency Quadrupole Accelerator
P. N. Ostroumov, B. Mustapha, A. Barcikowski, C. Dickerson, A. A. Kolomiets, S. A. Kondrashev, Y. Luo, D. Paskvan, A. Perry, D. Schrage, S. I. Sharamentov, R. Sommer, W. Toter, and G. Zinkann
Phys. Rev. ST Accel. Beams **15**, 110101 (2012)

PHY-13192-HI-2012
High-Spin Structure, K Isomers, and State Mixing in the Neutron-Rich Isotopes ^{173}Tm and ^{175}Tm
R. O. Hughes, G. J. Lane, G. D. Dracoulis, A. P. Byrne, P. H. Nieminen, H. Watanabe, M. P. Carpenter, P. Chowdhury, R. V. F. Janssens, F. G. Kondev, T. Lauritsen, D. Seweryniak, and S. Zhu
Phys. Rev. C **86**, 054314/1-22 (2012)

PHY-13223-HI-2012
Observation of New Microsecond Isomers Among Fission Products of 345 MeV/Nucleon ^{238}U
D. Kameda, et al.
Phys. Rev. C **86**, 054319 (2012)

PHY-13276-HI-2012
Yrast Structure of ^{206}Bi: Isomeric States and One-Proton-Particle, Three-Neutron-Hole Excitations
N. Cieplicka, K. H. Maier, B. Fornal, B. Szpak, R. V. F. Janssens, M. Alcorta, R. Broda, M. P. Carpenter, C. J. Chiara, C. R. Hoffman, B. P. Kay, F. G. Kondev, W. Królas, T. Lauritsen, C. J. Lister, E. A. McCutchan, T. Pawłat, A. M. Rogers, D. Seweryniak, N. Sharp, W. B. Walters, J. Wrzesiński, and S. Zhu
Phys. Rev. C **86**, 054322/1-10 (2012)

PHY-13316-HI-2012
Candidate Superdeformed Band in ^{28}Si
D. G. Jenkins, C. J. Lister, M. P. Carpenter, P. Chowdhury, N. J. Hammond, R. V. F. Janssens, T. L. Khoo, T. Lauritsen, D. Seweryniak, T. Davinson, P. J. Woods, A. Jokinen, H. Penttila, F. Haas, and S. Courtin
Phys. Rev. C **86**, 064308/1-5 (2012)

PHY-13340-HI-2012
Spectroscopic Study of the ^{64,66,68}Ni Isotopes Populated in the ^{64}Ni + ^{238}U Collisions
R. Broda, T. Pawlat, W. Królas, R. V. F. Janssens, S. Zhu, W. B. Walters, B. Fornal, C. J. Chiara, M. P. Carpenter, N. Hoteling, Ł. W. Iskra, F. G. Kondev, T. Lauritsen, D. Seweryniak, I. Stefanescu, X. Wang, and J. Wrzesiński
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PHY-13333-HI-2012
High-Spin Rotational Bands in ^{123}I
Purnima Singh, A. K. Singh, A. N. Wilson, I. Ragnarsson, H. Hübel, A. Bürger, M. P. Carpenter, S. Chmel, P. Fallon, G. B. Hagemann, B. Herskind, Hoa Ha, R. V. F. Janssens, K. Juhász, A. Kardan, T. L. Khoo, F. G. Kondev, A. Korichi, T. Lauritsen, B. M. Nyakó, J. Rogers, G. Sletten, J. Timár, and S. Zhu
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PHY-13279-HI-2012
Constraining the $0\nu2\beta$ Matrix Elements by Nuclear Structure Observables
S. J. Freeman and J. P. Schiffer
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PHY-13217-TH-2012
Spectrum of Hadrons with Strangeness
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PHY-13179-TH-2012
Collective Perspective on Advances in Dyson-Schwinger Equation QCD
Adnan Bashir, Lei Chang, Ian C. Cloët, Bruno El-Bennich, Yu-xin Liu, Craig D. Roberts, and Peter C. Tandy
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PHY-13081-ME-2011
Transition Between Nuclear and Quark-Gluon Descriptions of Hadrons and Light Nuclei
R. J. Holt and R. Gilman
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PHY-13288-HI-2012
Lifetime Measurements in ^{182,186}Pt
J. C. Walpe, U. Garg, S. Naguleswaran, J. Wei, W. Reviol, I. Ahmad, M. P. Carpenter, and T. L. Khoo
Phys. Rev. C **85**, 057302/1-4 (2012)

PHY-12946-ME-2011
Hard Probes of Short-Range Nucleon-Nucleon Correlations
J. Arrington, D. W. Higinbotham, G. Rosner, and M. Sargsian
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